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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,866	10/02/2003	Megumi Yamaoka	MAT-8021US1	5313

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EXAMINER
KIM, CHONG R

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	**Application No.** 10/677,866	**Applicant(s)** YAMAOKA ET AL.	
	Examiner Charles Kim	**Art Unit** 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/676,680.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment and Arguments

1. Applicant's amendment filed on July 27, 2005 has been entered and made of record.

2. In view of applicant's amendment, the objection to claim 12 is withdrawn.

3. Applicants indicate (page 6) that the disclosure has been amended to overcome the objection to the specification, but the Examiner was unable to find such amendments. Therefore, the previous objection to the specification is maintained.

4. Applicant's arguments with respect to the rejections of claims 12 and 19 under 35 U.S.C. 102(b) as being anticipated by Griffin (U.S. Patent No. 5,265,173) have been fully considered and are persuasive. The rejection of claims 12 and 19 in view of the Griffin reference has been withdrawn.

5. Applicant's arguments with respect to the rejections of claims 12-17, 19 under 35 U.S.C. 102(e) as being anticipated by Imagawa (U.S. Patent No. 6,819,782) have been fully considered, but they are not deemed to be persuasive for at least the following reasons.

Applicants argue (page 6) that their claimed invention (claim 12) differs from the prior art because "Applicants' claim 12 includes a further feature neither disclosed nor suggested by Imagawa, namely: ...comparing the input-image segments with the segment-feature data of the shape segments to determine whether or not an object having the shape is present in the input image..." The Examiner disagrees. Imagawa explains that the input-image segments (input hand shape image) are compared with the segment-feature data (eigenspace projection coordinates) to determine whether or not an object having the shape (hand shape) is present in the input image in column 20, line 27-column 21, line 10. Therefore, it appears that the step of determining the hand shape image that is the closest to the input hand shape image determines whether or not an object having the shape is present in the input image.

Specification

6. The disclosure is objected to because of the following informalities:

a) On page 15, lines 22-23 state, "Fig.11 illustrates same-type window data stored in same-type window database 843." However, the figure does not appear to show this.

b) On page 16, at line 2, it appears that the word "input" should be inserted before "image".

Appropriate correction is required.

Claim Objections

The following quotation of 37 CFR § 1.75(a) is the basis of objection:

> (a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

7. Claims 14-18 are objected to under 37 CFR § 1.75 (a) and (d)(1) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery.

Referring to claim 14, the phrase “the feature statistic values” in line 13 lacks antecedent basis. It appears that the applicant intended the phrase to read “the statistic values”. Appropriate correction is required.

Referring to claim 18, it appears that the phrase “grater” in line 7 was meant to read “greater”. Appropriate correction is required.

Claims not mentioned specifically are dependent from objected antecedent claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Referring to claim 18, the phrase “to sum up the overall area estimated for each of the input-image segment vectors, to determine that the object having the shape is present in the input image if a value provided by the summing up is grater than a predetermined value” in lines 4-7 is not sufficiently supported by the applicant’s original specification. The closest instance to this feature appears to be on page 35 of the applicant’s specification, where it states, “overall shape area estimating unit 2962 estimates the area in which the overall shape of the object exists in the input image from the position of the shape segment...counts the position of the overall shape of the object received from the overall shape area estimating unit...judging that the object is located at the position which is determined a number of times greater than a certain number.” However, the cited portion does not indicate that the overall area for each of the input-image segment vectors are summed up and the object having the shape is determined to be present if the value from the summing is greater than a predetermined value. The Examiner was unable to find support in the applicant's specification for the claimed features.

9. Claim 18 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Referring to claim 18, the phrase "to sum up the overall area estimated for each of the input-image segment vectors, to determine that the object having the shape is present in the input image if a value provided by the summing up is grater than a predetermined value" in lines 4-7 is not sufficiently supported by the applicant's specification. More specifically the applicant's specification is non-enabling in regards to how the object having the shape is determined to be present based on a summed value of the overall area estimated for each input-image segment vectors.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 12-17, 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Imagawa et al., U.S. Patent No. 6,819,782 ("Imagawa").

Referring to claim 12, Imagawa discloses an image recognizing apparatus comprising:

a. an image database (12A) for storing a shape identifier (shape information) and images of objects (hands) as model images corresponding to the shape identifier, each of the objects having a same shape (hand shape), the shape identifier representing the shape of the objects (col. 20, lines 30-36);

b. a shape database (12A) for extracting segment-feature data (eigenspace projection coordinates) from image segments each of which is provided by dividing an object of each of the model images (col. 20, lines 27-30), each of the image segments having a same shape segment, and for storing the segment-feature data of the image segments corresponding to the shape identifier together with the shape identifer (col. 20, lines 30-36);

c. an image input unit (21) for supplying an input image (col. 20, lines 59-62);

d. an image cutout unit (21) for cutting out the input image to provide input-image segments (hand shape images) [col. 20, lines 59-62];

e. shape classifying means (23) for comparing the input-image segments with the segment-feature data of the shape segments to determine whether or not an object having the shape is present in the input image (col. 21, lines 1-10);

f. an output unit for releasing data indicating the shape of the object and a position of the object having the shape in the input image if the object having the shape is present in the input image (col. 21, lines 1-10).

Referring to claim 13, Imagawa further discloses that the shape database is operative to extract an average image of the image segments and a variance of each pixel in the image segments as segment-feature data (col. 22, lines 10-19; note that the covariance matrix is a matrix of variance); and store the average image and the variance corresponding to the shape identifier (col. 22, lines 19-24; note that the eigenvalues and eigenvectors are stored in the database, col. 20, lines 49-51).

Referring to claim 14 as best understood, Imagawa further discloses an image recognizing apparatus for detecting a shape of an object from an image, comprising:

a. an image database storing a shape identifier (shape information) and images of objects as model images corresponding to the shape identifier, each of the objects having a same shape (hand shape), the shape identifier representing the shape of each of the objects (col. 20, lines 30-36);

b. model generating means for calculating a base vector in a feature space from pixel values of model image segments each of which is provided by dividing each of the model images (col. 20, lines 27-30), for projecting the model image segments in the feature space as model image segment vectors (col. 20, lines 30-48), for calculating statistic values from the model image segment vectors (col. 20, lines 37-48 and col. 22, lines 8-26), each of the model image segments having a same shape segment, and for adding the shape identifier to the feature statistic values to provide a feature shape parameter (col. 20, lines 30-36);

c. a shape database for storing the base vector and the feature shape parameter (col. 20, lines 30-36);

d. an image input unit for supplying an input image (col. 20, lines 59-62);

e. an image cutout unit for cutting out the input image to provide input-image segments (hand shape images) [col. 20, lines 59-62];

f. shape classifying means for projecting the input-image segments in the feature space to provide input-image segment vectors based on the base vector, respectively, and for comparing the image segment vectors with the model image segment vectors using the feature shape parameter to determine whether or not an object having the shape is present in the input image (col. 20, line 59-col. 21, line 10), and

g. an output unit for releasing data indicating the shape of the object and a position of the object in the input image if the object having the shape is present in the input image (col. 21, lines 1-10).

Referring to claim 15, Imagawa further discloses that the model generating means is operative to calculate the feature shape parameter from an average vector and a covariance of the model image segment vectors (col. 22, lines 9-23 and col. 28, lines 34-41; the average here is a vector).

Referring to claim 16, Imagawa further discloses that the model generating means is operative to calculate an average image of the model image segments for the shape segment, to calculate the base vector from a pixel value of the average image, to project the model image segments in the feature space as model image segment vectors, and to add the shape identifier to the model image segment vectors (column 22, lines 9-27).

Referring to claim 17, Imagawa further discloses that the shape identifier includes data indicating a portion of the shape segment in the shape (column 21, lines 45-61).

Referring to claim 19, see the rejection of at least claim 12 above.

Allowable Subject Matter

11. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 571-272-7421. The examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri 9:30am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ck
ck
August 29, 2005

SAMIR AHMED
PRIMARY EXAMINER